

Community	Current Treatment Technology	Would the criteria apply? Or is there dilution capability?	Design Flow (MGD)	Actual Flow (MGD)	Community Population (Census 2010)	Number of Households (American Community Survey 2005-2009)	Median Household Income (2010) - American Community Survey.	Current average household sewer bill per year (2008 / 2011)	Current average sewer fee as % of MHI	Notes	Capital cost (million dollars) to meet the numeric nutrient criteria (WERF)	Annual Capital cost to meet the numeric nutrient criteria (L4 WERF)	Annual Operations costs to meet the numeric nutrient criteria L4WERF	Annual Capital and Operations cost (\$)	Annual Additional Cost per Household (increase in sewer rate)	Predicted average household sewer fee to meet criteria	Expected % MHI to Meet Base Numeric Nutrient Criteria (plus current wastewater fees)	Percent increase in Wastewater bill	
Big 7	Kalispell	BNR (modified Johannesburg): 3.1 to 5.4 MGD; avg. 12 mg/l TP; 10 mg/l TN.	Yes. EOP: Ashley Creek	5.4	3.10	27,544	10,012	\$39,953.00	\$216.00	0.54%	Sewer rates obtained from City in 2011. Plant ~WERF Level 2.	49.14	\$3,941,028	\$1,228,530	\$5,169,558	\$516	\$732	1.83	239%
Big 7	Bozeman	some BNR now; 5-stage Barndorff; new plant will be BNR (1 mg/l TP; 3 mg/l TN starting in 2011); current 5.8 MGD; increasing to 13.9 mgd	Yes. Also Gallatin TMDL in the works.	13.8	5.80	37,280	14,614	\$41,661.00	\$372.00	0.89%	Sewer rates obtained from City in 2011. Plant ~WERF Level 2. Really Level 3 for TN and 1 for TP	125.58	\$10,071,516	\$2,298,540	\$12,370,056	\$846	\$1,218	2.92	228%
Big 7	Helena	BNR; 3 mg/l TP; 10 mg/l TN; design capacity of 5.4; current discharge ~9.0 MGD	Yes. WLA set in TMDL based on numeric criteria.	5.4	3.00	28,190	12,337	\$47,152.00	\$265.44	0.56%	Sewer rates obtained from City in 2011. Plant ~ WERF Level 1.	67.50	\$5,413,500	\$1,298,400	\$6,711,900	\$544	\$809	1.72	205%
Big 7	Butte	Current technology is activated sludge (TN of 18.5 mg/l; TP of 2.11 mg/l); under Order to Construct to membrane BNR; current design is 8.5 MGD; talking about lowering to 6.3 MGD. Sewer Fee based on DEQ estimates. Included in current fee is \$27 million upgrade in new capital costs and \$1.125 million in O&M costs which would bring them to 5 TN and 0.1 TP	Yes. EOP.	8.5	4.00	33,525	14,041	\$37,335.00	\$360.00	0.96%	Sewer Fee based on DEQ estimates. While current monthly fee is \$13.50, the \$27 million upgrade in new capital costs plus \$1.125 million in additional O&M costs which would bring them to 5 TN and 0.1 TP (WERF 3) would raise rates to \$30 per month	62.90	\$5,044,580	\$1,161,800	\$6,206,380	\$442	\$802	2.15	123%
Big 7	Billings	2ndary treatment; Design flow of 26 MGD (avg.) and 40 MGD max.	Yes. Discharge into the Yellowstone River.	26	26	104,170	41,841	\$45,004.00	\$218.28	0.49%	The numbers for Billings and Great Falls (treatment levels, treatment costs etc.) were obtained from HDR.	312.50	\$25,062,500	\$11,252,800	\$36,315,300	\$868	\$1,086	2.41	398%
Big 7	Missoula	advanced secondary treatment facility with biological nutrient removal and ultraviolet disinfection; meets Clark Fork criteria w/ mixing zone. 8.2 mg/l TN; 0.16-0.4 mg/l TP; get a mixing zone, meeting criteria currently. BNR. Design flow = 12 MGD; actual flow = 9 MGD. (designed for 10 and 1). (HDR)	Yes. With mixing zone. Currently meeting criteria after mixing zone.	12	9	66,788	27,553	\$34,319.00	\$152.14	0.44%	Sewer rates obtained from city. 2011 values.	88.80	\$7,121,760	\$2,614,050	\$9,735,810	\$353	\$505	1.47	232%

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Fig 7 Great Falls	conventional 2ndary activated sludge (max 21 MGD; avg. 10 MGD)	Yes. Missouri River	26	26	58,505	23,998	\$40,718.00	\$187.20	0.46%	At WERF 1. The numbers for Billings and Great Falls (population, treatment levels, etc.) were obtained from HDR.	312.50	\$25,062,500	\$11,252,800	\$36,315,300	\$1,513	\$1,700	4.18	808%
> 1 MGD Livingston	discharges into the Yellowstone; permit renewed in 2010; mechanical plant w/ 2 primary clarifiers, 3 rotating biological contactors, UV, installing co-composting. DMR shows 11 mg/l TN average (20 mg/l for May) and 2 mg/l TP (3 mg/l for May).	Yes. Discharge into the Yellowstone River.	5	2	7,414	2,966	\$35,689.00	\$600.00	1.68%	Assume WERF Tier 1	62.50	\$5,012,500	\$865,600	\$5,878,100	\$1,982	\$2,582	7.23	330%
> 1 MGD Miles City	2ndary treatment plus oxidation ditch. 2011 permit. Algae plant study to remove nutrients. Extended aeration system w/2 oxidation ditches w/rotating brush aerators; 2 clarifiers and chlorine basin. TN avg of 23.5 mg/l; TP avg. 3.6 mg/l.	Yes. Discharge into the Yellowstone River.	3.7	2	9,500	3,800	\$37,554.00	\$236.10	0.63%	Assume WERF Tier 1	46.25	\$3,709,250	\$865,600	\$4,574,850	\$1,204	\$1,440	3.83	510%
> 1 MGD Hamilton	BNR facility. 1 w/ extended aeration system. Oxidation ditch w/ rotating brush aerators. 3 clarifiers. Upgraded in 2010. TN avg 5.5 mg/l; TP avg. 5 mg/l.	Yes	1.98	0.68	5,200	2,080	\$25,161.00	\$276.00	1.10%	Assume WERF 2 (since TN gets to WERF 3 and TP WERF 1)	24.75	\$1,984,950	\$301,984	\$2,286,934	\$1,099	\$1,375	5.47	398%
> 1 MGD Lewistown	BNR plant. Focus on TP removal. 0.8 mg/l TP; 3-4 mg/l TN.	Yes	2.5	1.5	5,813	2,325	\$31,729.00	\$387.60	1.22%	Assume WERF 3 based on current treatment levels	18.50	\$1,483,700	\$423,675	\$1,907,375	\$820	\$1,208	3.81	212%
> 1 MGD Havre	Discharges into the Milk River. Permit renewed in 2011. Activated sludge facility with effluent chlorination. 2006-2010 data showed avg. TP of 3.4 (TN not required). 2011 DMR showed TN of 19.4 mg/l; TP of 1.3 mg/l.	Yes	1.8	1.38	10,325	4,130	\$43,577	\$240.00	0.55%	Assumed WERF Level 1 and 5,000 gallons usage. Rate is \$9.15 flat plus \$2.15 per 1,000 gallons	\$22.50	\$1,804,500	\$597,264	\$2,401,764	\$582	\$822	1.89	242%

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MGD	Columbia Falls	Newer plant. Designed to achieve 8 mg/l TN	Yes	0.766	0.37	4,688	1,621	\$38,750	\$532.20	1.37%	Upgrade to RO	\$5.67	\$454,606	\$580,900	\$1,035,506	\$639	\$1,171	3.02	120%
MGD	Manhattan	Discharges into Diva Ditch. Permit renewed in 2010. Denitrification with fixed film suspended growth system, clarifiers and aerobic sludge digestion, UV. DMR data from winter quarter shows 11 mg/l TN and 1 mg/l TP. 2008-2010 showed avg. TN of 14 mg/l TN and 4 mg/l TP.	Yes	0.6	0.4	1,400	560	\$50,729	\$362.40	0.71%	Assumed WERF Level 2. Correct? Paul.	\$5.46	\$437,892	\$63,408	\$501,300	\$895	\$1,258	2.48	247%
MGD	Lolo	No steps towards nutrient removal. For Lolo, TN is generally less than 30 mg/l and TP less than 7. Generally heaving loadings for Lolo. Sewer rates--Lolo \$30.25-ish/no - (RSID) based on property values	Yes	0.34	0.38	3,892	1,060	\$46,442	\$363.00	0.78%	Level 1.	\$4.25	\$340,850	\$164,464	\$505,314	\$477	\$840	1.81	131%
MGD	Stevensville	Stevensville is generally a little better with TN generally below 20 and TP less than 4.	Yes	0.3	0.29	1,809	795	\$33,776	\$535.08	1.58%		\$3.75	\$300,750	\$125,512	\$426,262	\$536	\$1,071	3.17	100%
Lagoons	Philipsburg	lagoon to simple mechanical system - ref: Gary Swanson, consulting engineer- 15TN, ZTP	Yes.	0.2	0.2	820	399	\$31,375.00	\$200.00	0.64%	Assume WERF 1	\$12.50	\$ 1,002,500.00	382,800.00	\$1,385,300.00	\$3,471.93	\$3,672	11.70	1736%

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Lagoons Cut Bank	Lagoon.	Yes	0.643	0.643	2,869	1,290	\$44,833	\$138.48	0.31%	4000 gallons. Base rate \$9.48 at 3000 gallons plus \$2.06 for next 1,000 gallons	\$14.02	\$ 1,124,195.48	228,290.40	\$1,352,485.88	\$1,048.44	\$1,187	2.65	757%
Lagoons Deer Lodge	Moving from an existing lagoon to mechanical plant with land application. Ref. planning document--To get to variance only. Because this would be a land application system, so theoretically, the N and P would be zero to the Clark Fork	Yes	3.3	1.06	3,111	1,522	\$40,320	\$409.56	1.02%	Moving from an existing lagoon to mechanical plant with land application. Ref. planning document--To get to variance only. Because this would be a land application system, so theoretically, the N and P would be zero to the Clark Fork	\$71.94	\$1,281,145.00	\$555,493.00	\$1,816,638.00	\$1,193.59	\$1,603	3.98	291%
Lagoons Glendive	domestic WW lagoon; 3 cell facultative; current O&M costs are <\$; 8-10 capital costs for new plant. O&M increase of ~\$300,000. new avg. 1.15 MGD; PER completed to upgrade to mechanical SBB or BNR plant	Yes	1.3	0.6	4935	1883	\$42,821	\$213.96	0.50%		\$28.34	\$2,272,868.00	\$284,430.00	\$2,557,298.00	\$1,358.10	\$1,572	3.67	635%
Lagoons Redlodge	Lagoon.	Yes	1.2	0.65	2125	1055	\$50,123	305.28	0.61%	Sewer fee and MHI based on DEQ estimates. DEQ MHI value less than the 2010 USDA county data.	\$26.16	\$2,098,032.00	\$308,132.50	\$2,406,164.50	\$2,280.72	\$2,586	5.16	747%
Lagoons Big Fork	Lagoon.	Yes	0.5	0.3	4270	1708	\$44,398	\$80.36	1.31%		\$10.90	\$874,180.00	\$142,215.00	\$1,016,395.00	\$595.08	\$1,175	2.65	108%
Lagoons Highwood	Lagoon.	Yes	0.026	0.015	176	53	\$62,614	600.00	0.96%		\$0.57	\$45,457.36	\$7,110.75	\$52,568.11	\$991.85	\$1,592	2.54	165%
Lagoons Circle	Lagoon.	Yes	0.16	0.065	615	234	\$29,000	259.56	0.90%		\$3.49	\$279,737.60	\$30,813.25	\$310,550.85	\$1,327.14	\$1,587	5.47	511%

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NOTE: Operation costs include energy and chemical costs only and do not include labor and maintenance cost. As such, these numbers are on the low side.
NOTE: The numbers are intended to provide ROUGH ESTIMATES for discussion purposes and do not reflect the site-specific conditions at each plant.
NOTE: Capital costs were assumed to cover a 20-year bond with 5% interest (used 0.0802 conversion factor)
NOTE: MHI is based on data from Montana CEIC based on 2010 estimates.

Indicates rough estimates; need to verify
Big Fork number of household based on population divided by 2.5

WERF

Level	Description	Capital Cost (\$/gpd)	Operations (\$1/ MG/day Treated)
Level 1	No N and P removal	9.3	250
Level 2	1 mg/l TP; 8 mg/l TN	12.7	350
Level 3	0.1-0.3 mg/l TP; 4-8 mg/l TN	14.4	640
Level 4	<0.1 mg/l TP; 3 mg/l TN	15.3	880
Level 5	<0.01 mg/l TP; 1 mg/l TN	21.8	1370

Tina--- check report. Do you need to divide by 10? Or are the numbers in MG?
assume 0 as existing capital costs.

had to pick a level; could be estimated on the less expensive side..?

Costs to Meet Criteria	Capital Cost(\$million/MGD)	Design Flow	Facility Upgrade Capital Costs (\$million)	Annualized Capital Costs (Assumed 20-yr bond & 5% interest; \$million/year)	Annualized Capital Costs (Assumed 20-yr bond & 5% interest; \$million/year)	Operations (\$1/MG/day Treated)	Operations Costs (\$/ year/ 1 MGD)	Actual Flow	Facility Upgrade Operations Costs (annual) based on Facility MGD	Membrane Replacement Cost (\$24,000 /yr/1 MGD)*Actual Flow	Total Operations costs including membrane replacement
Kalispell	9.1	5.4	\$49.14	\$3.94	\$3,941,028.00	1020	372,300.00	3.10	1,154,130.00	74,400.00	1,228,530.00
Bozeman	9.1	13.8	\$125.58	\$10.07	\$10,071,516.00	1020	372,300.00	5.80	2,159,340.00	139,200.00	2,298,540.00
Helena	12.5	5.4	\$67.50	\$5.41	\$5,413,500.00	1120	408,800.00	3.00	1,226,400.00	72,000.00	1,298,400.00
Butte	7.4	8.5	\$62.90	\$5.04	\$5,044,580.00	730	266,450.00	4.00	1,065,800.00	96,000.00	1,161,800.00
Billings	12.5	25	\$312.50	\$25.06	\$25,062,500.00	1120	408,800.00	26.00	10,628,800.00	624,000.00	11,252,800.00
Missoula	7.4	12	\$88.80	7.12176	\$7,121,760.00	730	266,450.00	9.00	2,398,050.00	216,000.00	2,614,050.00
Great Falls	12.5	25	\$312.50	25.0625	\$25,062,500.00	1120	408,800.00	26	10,628,800.00	624,000.00	\$11,252,800.00
Livingston	12.5	5	\$62.50	\$5.01	\$5,012,500.00	1120	408,800.00	2.00	817,600.00	48,000.00	\$865,600.00
Miles City	12.5	3.7	\$46.25	\$3.71	\$3,709,250.00	1120	408,800.00	2.00	817,600.00	48,000.00	\$865,600.00
Hamilton	12.5	1.98	\$24.75	1.98495	\$1,984,950.00	1120	408,800.00	0.68	277,984.00	24,000.00	301,984.00
Lewistown	7.4	2.5	\$18.50	1.4837	\$1,483,700.00	730	266,450.00	1.50	399,675.00	24,000.00	423,675.00
Havre	12.5	1.8	\$22.50	1.8045	\$1,804,500.00	1120	408,800.00	1.38	564,144.00	33,120.00	\$597,264.00
Columbia Falls	7.4	0.766	\$5.67	0.45460568	\$454,605.68	730	266,450.00	2.00	532,900.00	48,000.00	\$580,900.00
Manhattan	9.1	0.6	\$5.46	0.437892	\$437,892.00	1020	372,300.00	0.16	59,568.00	3,840.00	\$63,408.00
Lolo	12.5	0.34	\$4.25	0.34085	\$340,850.00	1120	408,800.00	0.38	155,344.00	9,120.00	\$164,464.00
Stephensville	12.5	0.3	\$3.75	0.30075	\$300,750.00	1120	408,800.00	0.29	118,552.00	6,960.00	\$125,512.00
Philipsburg	12.5	1	\$12.50	\$1.00	\$1,002,500.00	1120	408,800.00	1.00	408,800.00	24,000.00	\$432,800.00
Cut Bank	21.8	0.643	\$14.02	\$1.12	\$1,124,195.48	1120	408,800.00	0.64	262,858.40	15,432.00	\$278,290.40
Deer Lodge	21.8	3.3	\$71.94	\$5.77	\$5,769,588.00	1370	500,050.00	1.06	530,053.00	25,440.00	\$555,493.00
Glendive	21.8	1.3	\$28.34	2.272868	\$2,272,868.00	1370	450,050.00	0.6	270,030.00	14,400.00	\$284,430.00
Red Lodge	21.8	1.2	\$26.16	2.098032	\$2,098,032.00	1370	450,050.00	0.65	292,532.50	15,600.00	\$308,132.50
Big Fork	21.8	0.5	\$10.90	0.87418	\$874,180.00	1370	450,050.00	0.30	135,015.00	7,200.00	\$142,215.00
Highwood	21.8	0.026	\$0.57	0.04545736	\$45,457.36	1370	450,050.00	0.015	6,750.75	360.00	\$7,110.75
Circle	21.8	0.16	\$3.49	0.2797376	\$279,737.60	1370	450,050.00	0.065	29,253.25	1,560.00	\$30,813.25

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> 1 MGD	Kalispell	Already below variance levels, achieving avg. 0.12 mg/l TP and 10 mg/l TN. Town expected to pay an addition \$6,967,150.56 annually to achieve 2% MHI.	> 1 MGD (1 mg/l TP; 10 mg/l TN)	27,544	10,012	\$45,594.00	\$216.00	0.47%	Already meeting variance levels. Sewer rates obtained from City in 2011. Plant "WERF" Level 2.	\$0.00	\$0.00	0.00	\$0.00	\$0.00	\$216	0.47	0%	\$911.88	\$6,967,150.56	\$6,967,150.56
> 1 MGD	Bozeman	Already below variance levels, should be close to achieving 1 mg/l TP and 3-5 mg/l TN starting in 2011/2-12. Town expected to pay an additional \$8,319,750.2 annually to achieve 2% MHI.	> 1 MGD (1 mg/l TP; 10 mg/l TN)	37,280	14,614	\$47,065.00	\$372.00	0.79%	Already meeting variance levels. Sewer rates obtained from City in 2011. Plant "WERF" Level 2. Really Level 3 for TN and 1 for TP	\$0.00	\$0.00	0.00	\$0.00	\$0.00	\$372	0.79	0%	\$941.30	\$8,319,750.20	\$8,319,750.20
> 1 MGD	Helena	After optimization study, should be achieving variance levels. Currently at 3 mg/l TP and 10 mg/l TN. Town expected to pay an additional \$9,633,963.3 annually to achieve 2% MHI.	> 1 MGD (1 mg/l TP; 10 mg/l TN)	28,190	12,337	\$52,317.00	\$265.44	0.51%	Sewer rates obtained from City in 2011. Plant "WERF" Level 1.	\$18.36	\$1,472,472.00	109,500.00	\$1,581,972.00	\$128.23	\$394	0.75	48%	\$1,046.34	\$9,633,963.30	\$9,633,963.30
> 1 MGD	Butte	Under Order to Construct to membrane BMR Will already meet variance levels after upgrade. The \$27 million upgrade in new capital costs plus \$1,125 million in additional O&M costs which would bring them to 5 TN and 0.1 TP. Upgrade would result in 1.5% MHI. Additional costs needed?	> 1 MGD (1 mg/l TP; 10 mg/l TN)	33,525	14,041	\$40,055.00	\$360.00	0.90%	Will already meet variance levels after upgrade. While current monthly fee is \$13.50, the \$27 million upgrade in new capital costs plus \$1.125 million in additional O&M costs which would bring them to 5 TN and 0.1 TP would raise rates to \$30 per month	\$27.00	\$2,165,400.00	1,125,000.00	\$3,290,400.00	\$234.34	\$594	1.48	65%	\$801.10	\$6,193,485.10	\$6,193,485.10

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> 1 MGD	Missoula	Already meets Clark Fork criteria w/ mixing zone. Achieving 8.2 mg/l TN, 0.36 4 mg/l TP. Would the town be expected to pay more (~\$18 million annually) towards 2% MHI or not since they are achieving the criteria?	> 1 MGD (1 mg/l TP; 10 mg/l TN)	108,623	28,290	\$40,130.00	\$152.14	0.38%	Already meets variance levels	\$0.00	\$0.00	\$0.0	\$0.00	\$0.00	\$152	0.38	0%	\$802.60	\$18,401,513.40	\$18,401,513.40
> 1 MGD	Great Falls	Conventional 2ndary activated sludge (max 21 MGD; avg. 10 MGD). Based on Billings case study, likely long-term variance limits of level 4 for WERF (0-1 mg/l TP; 3 mg/l TN)	> 1 MGD (1 mg/l TP; 10 mg/l TN)	82,178	23,998	\$40,434.00	\$187.20	0.46%	and Great Falls (treatment levels, cost, etc.) were obtained from HDR.	\$85.00	\$6,817,000.00	\$949,000.0	\$7,766,000.00	\$323.61	\$511	1.26	173%	\$808.68	\$14,914,277.04	\$14,914,277.04
> 1 MGD	Billings	2ndary treatment; Design flow of 26 MGD (avg.) and 40 MGD max. Based on Billings case study, likely long-term variance limits of level 4 for WERF (0-1 mg/l TP; 3 mg/l TN)	> 1 MGD (1 mg/l TP; 10 mg/l TN)	104,170	41,841	\$45,004.00	\$218.28	0.49%	and Great Falls (treatment levels, cost, etc.) were obtained from HDR.	\$85.00	\$6,817,000.00	\$949,000.0	\$7,766,000.00	\$185.61	\$404	0.90	85%	\$900.08	\$28,527,193.80	\$28,527,193.80
> 1 MGD	Livingston	Based on existing high costs, likely that meeting 1 mg/l and 10 TN would be the feasible limits. MHI of 3.05 percent to achieve WERF level 3.	> 1 MGD (1 mg/l TP; 10 mg/l TN)	7414	2965.6	35,689	\$600.00	1.68%		17.00	1,363,400.00	\$73,000.00	\$1,436,400.00	\$484.35	\$1,084	3.04	81%			
> 1 MGD	Miles City	2011 permit; calculated variance limits to <0.1 mg/l TP; 3 mg/l TN	> 1 MGD (1 mg/l TP; 10 mg/l TN)	9500	3800	37,554	\$236.10	0.63%		22.20	1,780,440.00	\$499,900.00	\$2,240,340.00	\$589.56	\$826	2.20				
> 1 MGD	Hamilton	BNR facility: 1 w/ extended aeration system. Oxidation ditch w/ rotating brush aerators. 3 clarifiers. Upgraded in 2010.	> 1 MGD (1 mg/l TP; 10 mg/l TN)	5,200	2080	25,161	\$276.00	1.10%		5.00	793,980.00	\$238,000.00	\$1,031,980.00	\$496.14	\$772	3.07				
> 1 MGD	Lewistown	Already below variance levels/BNR plant. Likely below proposed interim effluent limits (0.8 mg/l TP; 3.4 mg/l TN).	> 1 MGD (1 mg/l TP; 10 mg/l TN)	5,813	2,325	31,729	\$387.60	1.22%		1.00	200,500.00	\$190,000.00	\$350,500.00	\$150.74	\$538	1.70				
< 1 MGD	Manhattan	Discharges into Diva Ditch. Permit renewed in 2010. Denitrification with fixed film suspended growth system, clarifiers and aerobic sludge digestion, UV. DMR data from winter quarter shows 11 mg/l TN and 1 mg/l TP. 2008-2010 showed avg. TN of 14 mg/l TN and 4 mg/l TP.	Yes	1,520	523	\$50,729	\$362.40	0.71%	Mainly designed to remove ammonia and some TN, but now have NDS limit. May be able to meet with operational changes. TP of 2 mg/l may require more capital & O&M expenses. Ref: planning document, SRF loan application	\$7.56	\$606,312.00	100,000.00	\$706,312.00	\$1,350.50	\$1,713	3.38	373%	\$1,014.58	\$341,090.14	
< 1 MGD	Columbia Falls	Columbia Falls already meets variance level standards. Actual cost of \$3,927,688	Yes- but Columbia Falls already meets it	4,688	1,621	\$38,750	\$532.20	1.37%	Upgrade to an existing Chemical P-removal plant - actual effluent concentrations are 4 TN and 0.05TP - already included in current fee	\$0.00	\$0.00	0.00	\$0.00	\$0.00	\$532	1.37	0%	\$775.00	\$393,578.80	
< 1 MGD	Havre	Discharges into the Milk River. Permit renewed in 2011. Activated sludge facility with effluent chlorination. 2006-2010 data showed avg. TP of 3.4 (TN not required). 2011 DMR showed TN of 19.4 mg/l; TP of 1.3 mg/l.		10,325.00	4130	\$38,082	240.00	0.63%	Sewer fee and MHI based on DEQ estimates. DEQ MHI value less than the 2010 USDA county data.	\$26.40	\$2,117,280.00	643860	\$2,761,140.00	\$668.56	\$909	2.39	279%			

Community	Current Treatment Technology	Flow Category	Community Population	Number of Households (Population / 2.5) based on 2000 Census	Median Household Income (2009) - countywide MHI. Recommend updating for service area.	Current average household sewer bill per year (2008 / 2011)	Current average sewer fee as % of MHI	Notes	Capital cost (million dollars) to meet the approximate variance levels (WESEF)	Annual Capital cost to meet the approximate variance levels (L4 WESEF)	Annual Operations costs to meet the approximate variance levels L4WESEF	Annual Capital and Operations cost (\$)	Annual Additional Cost per Household (increase in sewer rate)	Predicted average household sewer fee to meet criteria	Expected % MHI to Meet Variance Numbers (plus current wastewater fees)	Percent increase in Wastewater bill	2% MHI	Total additional annual amount town would spend total to get to 2% MHI
Lagoons Philpsburg	lagoon to simple mechanical system - ref: Gary Swanson, consulting engineer- 15TN, ZTP: Do we have actual costs for the upgrade?	Yes.	820	399	35806.00	200	0.56%	lagoon to simple mechanical system - ref: Gary Swanson, consulting engineer- 15TN, ZTP	\$0.68	\$54,536.00	7,300.00	\$61,836.00	\$154.98	\$355	0.99	77%	\$716.12	\$205,911.88
Lagoons Cut Bank		Yes	2,869	1,290	\$29,000	\$136.48	0.48%	4000 gallons. Base rate \$0.48 at 3000 gallons plus \$2.06 for next 1,000 gallons	\$12.50	\$1,018,540.00	7,300.00	\$1,025,840.00	\$795.22	\$934	3.22	574%	\$580.00	\$569,560.80
Lagoons Deer Lodge	Moving from an existing lagoon to mechanical plant with land application. Ref: planning document--To get to variance only. Because this would be a land application system, so theoretically, the N and P would be zero to the Clark Fork	Yes	3,111	1,522	\$40,320	\$409.56	1.02%		\$15.25	\$1,261,145.00	602,000.00	\$1,863,145.00	\$1,224.14	\$1,634	4.05	299%	\$806.40	\$603,990.48
Lagoons Glendive	Upgrade from a lagoon to mechanical plant - BNR or otherwise would result in > 2% MHI		4621.00	1848.40	37000.00	213.96	0.58%		\$10.00	\$802,000.00	300,000.00	\$1,102,000.00	\$596.19	\$810	2.19			
Lagoons Redfodge	Upgrade from a lagoon to mechanical plant - BNR or otherwise would result in >1.5% MHI		9,756.00	3,902	\$40,379	305.28		Sewer Fee and MHI based on DEC estimates. DEC MHI value less than the 2010 USDA county data.	\$10.00	\$802,000.00	300,000.00	\$1,102,000.00	\$282.39	\$588	1.46			
	2% MHI information draft numbers pending input																	

WERF

Level	Description	Capital Cost (\$/gpd)	Operations (\$1,000/yr/10 MG Treated)
Level 1	No N and P removal	9.3	250
Level 2	1 mg/l TP; 8 mg/l TN	12.7	350
Level 3	0.1-0.3 mg/l TP; 4-8 mg/l TN	14.4	640
Level 4	<0.1 mg/l TP; 3 mg/l TN	15.3	880
Level 5	<0.01 mg/l TP; 1 mg/l TN	21.8	1370

Costs to Meet Criteria	Capital Cost(\$million/MGD)	Design Flow	Facility Upgrade Capital Costs (\$million)	Annualized Capital Costs (Assumed 20-yr bond & 5% interest; \$million/year)	Annualized Capital Costs (Assumed 20-yr bond & 5% interest; \$million/year)	Operations (\$1/MG/day Treated)	Operations Costs (\$/ year/ 1 MGD)	Actual Flow	Facility Upgrade Operations Costs (\$/year/1 MGD) based on Facility MGD	Membrane Replacement Cost (\$24,000 /yr/1 MGD)*Actual Flow - not necessary b/c no RO	Total Operations costs including membrane replacement
Kalispell	0	5.4	\$0.00	\$0.00	\$0.00	0	0.00	3.10	0.00	0.00	0.00
Bozeman	0	13.8	\$0.00	\$0.00	\$0.00	0	0.00	5.80	0.00	0.00	0.00
Helena	3.4	5.4	\$18.36	\$1.47	\$1,472,472.00	100	36,500.00	3.00	109,500.00	0.00	109,500.00
Butte	Actual Costs	1	\$27.00	\$2.17	\$2,165,400.00	0	0.00	4.00	1,125,000.00	0.00	1,125,000.00
Missoula											
Great Falls	3.4	25	\$85.00	6.817	\$6,817,000.00	100	36,500.00	26	949,000.00	0.00	\$949,000.00
Billings	3.4	25	\$85.00	\$6.82	\$6,817,000.00	100	36,500.00	26.00	949,000.00	0.00	949,000.00
Livingston	3.4	5	\$17.00	1.3634	\$1,363,400.00	100	36,500.00	2.00	73,000.00	0.00	\$73,000.00
Miles City	6	3.7	\$22.20	1.78044	\$1,780,440.00	630	229,950.00	2	459,900.00	0.00	\$459,900.00
Hamilton	5	1.98	\$9.90	0.79398	\$793,980.00		350,000	0.68	238,000.00		238,000.00
Lewistown	1	2.5	\$2.50	0.2005	\$200,500.00		100,000.00	1.5	150,000.00		150,000.00
Manhattan											
Columbia Falls	Actual Costs	0.766	\$3,927,688.00	\$315,000.58	\$315,000.58	0	0.00	0.37	0.00	0.00	\$0.00
Havre	6	4.4	\$26.40	2.11728	\$2,117,280.00	630	229,950.00	2.8	643,860.00	0.00	\$643,860.00
Philipsburg	3.4	0.2	\$0.68	\$0.05	\$54,536.00	100	36,500.00	0.20	7,300.00	0.00	7,300.00
Cut Bank											
Deer Lodge											
Glendive	10		\$10.00	0.802	\$802,000.00		300,000		300,000		300,000
Red Lodge											

Community	Median Household Income (2010) - countywide MHI. Recommend updating for service area.	Population	Number of Households (Population / 2.5) based on 2000 Census	Current Average Annual Household Wastewater Bill	Design Flow (MGD)	Actual Flow (MGD)	Current wastewater MHI	Percent MHI needed to get to RO/Base Numeric Nutrient Criteria (including current fees)	Increase over current Wastewater Bill to Reach RO	Percent MHI needed to get to Variance in SB367 (including current fees)	Increase over current Wastewater Bill to Reach Variance	2% MHI per household	Total additional <u>annual</u> amount Town Would Need to Spend to get to 2% MHI
Kalispell	\$39,953.00	27,544	10,012	\$216.00	5.4	3.10	0.54%	1.83%	239%	0.47%	0%	\$799	\$5,837,597
Bozeman	\$41,661.00	37,280	14,614	\$372.00	13.8	5.80	0.89%	2.92%	228%	0.79%	0%	\$833	\$6,740,269
Helena	\$47,152.00	28,190	12,337	\$265.44	5.4	3.00	0.56%	1.72%	205%	0.75%	48%	\$943	\$8,359,551
Butte	\$37,335.00	33,525	14,041	\$360.00	8.5	4.00	0.96%	2.15%	123%	1.48%	65%	\$747	\$5,429,655
Billings	\$45,004.00	104,170	41,841	\$218.28	26	26	0.49%	2.41%	398%	0.90%	85%	\$900	\$28,527,194
Missoula	\$34,319.00	66,788	27,553	\$152.14	12	9	0.44%	1.47%	232%	N/A	N/A	\$686	\$14,719,915
Great Falls	\$40,718.00	58,505	23,998	\$187.20	26	26	0.46%	4.18%	808%	1.26%	173%	\$814	\$15,050,586
Livingston	\$35,689.00	7,414	2,966	\$600.00	5	2	1.68%	7.23%	330%			\$714	\$337,426
Miles City	\$37,554.00	9,500	3,800	\$236.10	3.7	2	0.63%	3.83%	510%			\$751	\$1,956,924
Hamilton	\$25,161.00	5,200	2,080	\$276.00	1.98	0.68	1.10%	5.47%	398%			\$503	\$472,618
Lewistown	\$31,729.00	5,813	2,325	\$387.60	2.5	1.5	1.22%	3.81%	212%			\$635	\$574,278
Havre	\$43,577.00	10,325	4,130	\$240.00	1.8	1	0.55%	1.89%	242%			\$872	\$2,608,260
Columbia Falls	\$38,750.00	4,688	1,621	\$532.20	0.766	0.37	1.37%	3.02%	120%	1.37%	0%	\$775	\$393,579
Manhattan	\$50,729.00	1,400	560	\$362.40	0.6	0.4	0.71%	2.48%	247%	3.38%	373%	\$1,015	\$365,221
Philipsburg	\$31,375.00	820	399	\$200.00	0.2	0.2	0.64%	11.70%	1736%	0.99%	77%	\$628	\$170,573
Cut Bank	\$44,833.00	2,869	1,290	\$138.48	0.643	0.643	0.31%	2.65%	757%	3.22%	574%	\$897	\$978,052
Deer Lodge	\$40,320.00	3,111	1,522	\$409.56	3.3		1.02%	3.98%	291%	4.05%	299%	\$806	\$603,990
Glendive	\$42,821.00	4935	1,883	\$213.96	1.3	N/A	0.50%	3.67%	635%			\$856	\$1,209,752
Redlodge	\$50,123.00	2125	1,055	\$305.28	1.2	0.65	0.61%	5.16%	747%			\$1,002	\$735,525
Big Fork	\$44,398.00	4270	1,708	\$580.36	0.5		1.31%	2.65%	103%			\$888	\$525,381
Highwood	\$62,614.00	176	53	\$600.00	0.026	0.015	0.96%	2.54%	165%			\$1,252	\$34,571
Circle	\$29,000.00	615	234	\$259.56	0.16	0.065	0.90%	5.47%	511%			\$580	\$74,983

Yellow fill = Greater than 2% MHI to reach to certain level of wastewater treatment

Orange fill = Greater than 100% increase in wastewater fee costs to reach to certain level of wastewater treatment

Blue Fill = Town already meets the standard so no new costs or treatment needed

Community	Median Household Income (2010) - countywide MHI. Recommend updating for service area.	Population	Percent MHI needed to get to RO/Base Numeric Nutrient Criteria (including current fees)
Billings	\$41,841.00	104,170	2.41%
Missoula	\$27,553.00	66,788	1.47%
Great Falls	\$23,998.00	58,505	4.18%
Bozeman	\$14,614.00	37,280	2.92%
Butte	\$14,041.00	33,525	2.15%
Helena	\$12,337.00	28,190	1.72%
Kalispell	\$10,012.00	27,544	1.83%
Havre	\$4,130.00	10,325	1.89%
Miles City	\$3,800.00	9,500	3.83%
Livingston	\$2,965.60	7,414	7.23%
Lewistown	\$2,325.20	5,813	3.81%
Hamilton	\$2,080.00	5,200	5.47%
Columbia Falls	\$1,621.00	4,688	3.02%
Manhattan	\$560.00	1,400	2.48%
Glendive	\$1,883.00	4935	4.08%
Big Fork	\$1,708.00	4270	2.46%
Deer Lodge	\$1,522.00	3,111	5.89%
Cut Bank	\$1,290.00	2,869	2.65%
Redlodge	\$1,055.00	2125	5.16%
Philipsburg	\$399.00	820	11.70%
Circle	\$234.00	615	5.47%
Highwood	\$53.00	176	2.54%

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